

CLAIMS

1 1. A rotary engine assembly, comprising:
2 a three dimensional and substantially cylindrical shaped outer casing;
3 a plurality of pistons mounted in circumferentially traversable fashion
4 within said casing, at least one selected piston incorporating an extending male
5 feature, at least one further selected piston incorporating a recess within which
6 said male feature seats at selected stages during a rotary combustion cycle
7 associated with said pistons;
8 a valve operable with each of said pistons and in order to communicate,
9 to said associated piston, at least one air intake port and exhaust port extending
10 through said casings and during discrete stages of said combustion cycle;
11 a plurality of ratchet plates attached to said pistons and traversable
12 therewith, said ratchet plates engaging and actuating in rotary fashion a central
13 crankshaft; and
14 an oil feed line associated with a central location of said engine
15 assembly, said oil being disbursed through centrifugal force throughout said
16 pistons and associated contact surfaces and recollecting in gravity fashion
17 within a lowermost disposed oil pan.

1 2. The engine assembly as described in claim 1, said outer casing
2 further comprising a plurality of heat disbursement fins extending in outward
3 radial fashion therefrom.

1 3. The engine assembly as described in claim 1, further comprising
2 a plurality of first, second, third and fourth pistons, each including a male
3 feature extending in a selected direction and seating within an opposing female
4 location in a next succeeding piston.

1 4. The engine assembly as described in claim 1, each of said
2 pistons further comprising at least one of a spark plug, igniter, and a glow plug
3 mounted therein in a communicating and angularly offsetting fashion.

1 5. The engine assembly as described in claim 3, each of said
2 pistons further comprising an actuating and exteriorly positioned piston
3 reservoir, each of said reservoirs being engageable with a brake ring encircling
4 said pistons of said brackets being engageable with a brake receiver along
5 selected locations and at specified intervals.

1 6. The engine assembly as described in claim 1, further providing a
2 plurality of radially arrayed and pivotable brakes associated with said
3 crankshaft, said brakes selectively engaging with inwardly facing locations
4 defined along said ratchet plates.

1 7. The engine assembly as described in claim 1, further comprising
2 an arcuate shaped intake/exhaust manifold selectively associated with said

3 outer casing, at least one air filter being operably connected to said intake
4 manifold.

1 8. The engine assembly as described in claim 1, further comprising
2 an oil pump/filter assembly supplying said oil feed line.

1 9. The engine assembly as described in claim 3, at least one of said
2 male features being movable within an associated piston.

1 10. The engine assembly as described in claim 1, further comprising
2 a plurality of magnetic components to outwardly facing surfaces of said
3 pistons, an encircling electro-magnetic ring array being positioned around said
4 magnetic components and, upon rotational traversing of said pistons, an
5 electrical current being generated from said magnetic ring array.

1 11. The engine assembly as described in claim 7, an exhaust
2 extending from an exhaust manifold secured to a face of said outer casing
3 opposite said intake manifold.

1 12. The engine assembly as described in claim 11, further
2 comprising a cooling fan secured to a forward facing side of said outer casing,
3 a plurality of cooling slots being defined through a cover of said casing and

4 facilitating a flow of air through cooling holes in said pistons and said ratchet
5 plates, said cooling air exiting said engine via cooling slots in said casing.

1 13. The engine assembly as described in claim 1, further comprising
2 a rotary bearing interdisposed between said crankshaft and said ratchet plates.

1 14. The engine assembly as described in claim 1, further comprising
2 at least one pair of mounting brackets extending from exterior facing locations
3 of said outer casing.

1 15. The engine assembly as described in claim 1, each of said
2 pistons exhibiting a three dimensionally shaped and arcuate extending body.

1 16. The engine assembly as described in claim 1, further comprising
2 first and second crankshafts attachable in end-to-end fashion to provide inter-
3 connectability.

1 17. The engine assembly as described in claim 3, each of said
2 pistons further comprising a brake which actuates into a brake reservoir within
3 an encircling ring around said pistons along selected locations and at specified
4 intervals.

1 18. The engine assembly as described in claim 1, further providing a
2 plurality of radially arrayed and pivotal brakes associated with said piston
3 plates, said brakes selectively engaging with inwardly facing locations defined
4 along said crankshaft.

1 19. A rotary engine assembly, comprising:
2 a three dimensional and substantially cylindrical shaped outer casing
3 including an air intake cover plate and an exhaust cooling air manifold plate;
4 a plurality of pistons mounted in circumferentially traversable fashion
5 within said casing, each of said pistons incorporating an extending male feature
6 at a first end, an opposing and recessed location within a next succeeding
7 piston seating said male feature at selected stages during a rotary combustion
8 cycle associated with said pistons;
9 a valve operable with each of said pistons and in order to communicate
10 to said associated piston, at specified stages of said combustion cycle, intake
11 ports communicating with an air intake manifold secured over said cover and
12 exhaust ports extending through said casings to an exhaust/cooling manifold;
13 a plurality of ratchet plates operably engaged to said pistons and
14 traversable therewith, said ratchet plates engaging and actuating in rotary
15 fashion a central crankshaft;
16 a plurality of magnetic components arrayed relative to outwardly facing
17 surfaces of said pistons, an encircling electro-magnetic ring array being
18 positioned around said magnetic components and, upon rotational traversing of

19 said pistons, an electrical current being generated from said magnetic-ring
20 array; and

21 an oil feed line associated with said engine assembly, said oil being
22 disbursed through centrifugal force throughout said pistons and associated
23 contact surfaces and recollecting in gravity fashion within a lowermost
24 disposed oil pan.